CLAIMS

What is claimed is:

1. A method of broadcasting packets through a network of switches, the method comprising:
receiving a packet to broadcast through the network of switches;
selecting a broadcast path from a plurality of generated broadcast paths;
creating a broadcast path tag associated with the selected broadcast path;
inserting the broadcast path tag into the packet;
determining port(s) by which to forward the packet; and
transmitting the packet, with the broadcast path tag embedded therein, via the port(s) to next switch(es) in accordance with the selected broadcast path.

2. The method of claim 1, wherein the broadcast path comprises a spanning tree, and wherein the method is performed by an owner switch at a root of the spanning tree.

3. The method of claim 1, wherein the broadcast path tag comprises a source switch identifier, a code indicating a broadcast, and a path identifier.

4. The method of claim 1, further comprising:
receiving the packet by a hop switch;
reading the broadcast path tag embedded therein;
determining port(s) by which to forward the packet; and
transmitting the packet, with the broadcast path tag embedded therein, via the port(s) to next switch(es) in accordance with the selected broadcast path.

5. The method of claim 4, wherein the port(s) are determined by looking up the broadcast path tag in a tag table.

6. The method of claim 4, further comprising:
receiving the packet by a destination switch;
reading the broadcast path tag embedded therein; and
determining that an end of a branch of the broadcast path has been reached.

7. The method of claim 1, wherein the packet is forwarded outside the network of switches by removing the broadcast path tag from the packet and broadcasting the packet (with the broadcast path tag removed) outside of the network of switches.

8. The method of claim 1, wherein the method comprises multipath broadcasting in that different broadcast paths are selected to broadcast packets depending on specific criteria.

9. The method of claim 8, wherein the criteria relates to a type of the packet.

10. The method of claim 8, wherein the criteria relates to load balancing across the different broadcast paths.

11. A switching device configured to be a member of a switching mesh, the switching device comprising:
a plurarity of ports; and
a switch control device coupled to the plurality of ports,
wherein the switch control device is configured to provide multiple broadcast paths from a source switch through the switching mesh.

12. The switching device of claim 11, wherein the switch control device comprises an application specific integrated circuit (ASIC).

13. The switching device of claim 11, wherein the switch control device comprises a central processing unit configured to execute sequences of instructions.

14. The switching device of claim 11, wherein the switching device holds full knowledge of the multiple broadcast paths.

15. The switching device of claim 11, further comprising:
a modified layer 2 MAC table which includes a path tag.

16. The switching device of claim 15, further comprising:
a tag table referenced by the path tag.

17. The switching device of claim 16, wherein the tag table comprises a broadcast flag.

18. The switching device of claim 17, wherein if the broadcast flag is set for an entry in the tag table, then the path tag of the entry is utilized to index into a broadcast port map filter.

19. A method of configuring broadcasts in a switching mesh, the method comprising:
generating multiple broadcast paths by an algorithm in a source switch; and
broadcasting a broadcast path generation packet for each generated broadcast path out from the source switch to remaining switches in the switching mesh.

20. The method of claim 19, wherein the multiple broadcast paths are generated by the algorithm to avoid a single link failure from causing many of the broadcast paths to fail.

21. The method of claim 19, wherein a switch receiving a broadcast generation packet returns an acknowledgement packet.

22. The method of claim 21, wherein if an expected acknowledgement packet is not received, then a path invalid packet is returned to the source switch.